INCIDENCE AND PROFILE OF SEVERE ANEMIA IN CHILDREN AGED 1 MONTH TO 14 YEARS ATTENDING TERTIARY LEVEL CARE HOSPITAL

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ABSTRACT

AIM

To find out incidence and clinical profile of severe anaemia in children aged 1 month to 14 years attending tertiary care hospital.

METHODS

All children aged 1 months to 14 yrs of age attending tertiary level care. It is a Prospective study with a sample size of 1370 cases.

RESULTS

Incidence of anemia in 1 month to 14 yrs age group is 84.2%. Incidence of Severe Anemia is 4.33%. Etiological diagnosis in children aged 1 month to 14 yrs with severe anemia is Iron Deficiency Anemia 40%, Malaria 17%, Sickle Cell Anemia 15%, Beta Thalassemia 11%, Septicemia 4%, Collagen Vascular Disease 4%, Malignancies 4%, Dimorphic Anemia 2%, Beta Thalassemia Trait 2%.

CONCLUSIONS

Anemia is the most common comorbid condition in children aged 1 month to 14 years, accounting for 84%. Incidence of severe anemia is 4.3%. Iron deficiency anemia is the most common etiological diagnosis of severe anemia.

KEYWORDS

Anaemia, Etiological Diagnosis, Incidence.

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INTRODUCTION

Anemia is defined as reduction in the concentration of hemoglobin in the peripheral blood which is below normal for age and sex. Anaemia increases slightly from age 6-8 months to age 12-17 months, and declines steadily at older ages. Prevalence of anaemia does not vary by the sex of the child. Iron deficiency anemia is the most common cause of anemia. The prevalence of iron deficiency anemia in developing countries like India has been found to be as high as 63% in 1-3 year age group and 44% in the age group 3 to 6 years of children as per a study by ICMR in 1977. More recent report of the NFHS-2 shows that the prevalence has not much changed in 1998 – 1999 and is still 74% among children of 6 – 35 months of age.¹ This study was aimed to find out incidence and clinical profile of severe anaemia in children aged 1 month to 14 years attending tertiary care hospital.

MATERIALS AND METHODS

This study was conducted in paediatric OPD, at Chettinad Hospital and Research Institute, Chennai. All children aged between 1 month to 14 yrs of age, attending paediatric OPD

were included in the study. It is a Prospective study with a sample size of 1370 cases. Duration of Study: one year (June 2014 to May 2015).

Anemia is diagnosed if Hb% is below 11gm/dL (In children aged 1 months to 6 years) and below 12gm/dL (In children aged 6 years to 12 years). Severity of Anemia is graded as: Severe (0 to 6.9gm/dL), Moderate (7 to 9.9gm/dL), Mild (10 to 12gm/dL).^{2,3,4} They were evaluated for anemia by hemoglobin estimation. Those children who were having Hb less than 7g% were admitted and completely evaluated to know the etiology.

RESULTS

Age	Mild	Moderate	Severe
1 MONTH - 5 YRS	216 (41.3%)	285 (54.49%)	22 (4.2%)
6 YRS – 14 YRS	236 (37.46%)	366 (58.09%)	28 (4.44%)
TOTAL	452 (39.2%)	651 (56.46%)	50 (4.33%)

Table 1: Incidence of Severity of Anemia by Age

Incidence of severity of anemia by age In 1 years to 5 yrs of age children: Mild 41.3%, moderate 54.49%, severe anemia in 4.2%. In 6 yrs to 14 yrs of age children: Mild 37.46%, moderate 58.09%, severe anemia 4.44%. The incidence of severe of anemia is more in 6 yrs to 14 yrs.

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HISTORY	TOTAL		
FEVER	32	< 1 YEAR	04
		1 -5 YEAR	12
		6- 14 YEAR	16
HOOK WORMS	22	< 1 YEAR	NIL
		1 -5 YEAR	01
		6- 14 YEAR	21
JAUNDICE	08	< 1 YEAR	NIL
		1 -5 YEAR	01
		6- 14 YEAR	07
BLOOD TRANSFUSIONS	07	< 1 YEAR	02
		1 -5 YEAR	04
		6- 14 YEAR	01
SIBLINGS WITH SIMILAR COMPLAINTS	03	< 1 YEAR	NIL
		1 -5 YEAR	01
		6- 14 YEAR	02
FEEDING DIFFICULTIES	02	< 1 YEAR	02
		1 -5 YEAR	NIL
		6- 14 YEAR	NIL
Table 2: Significant History in Children with Severe Anemia			

Significant history in children with which severity of anemia presented 32 cases with fever with anaemia seen in malaria, kalaazar, tuberculosis, malignancy, hookworm infestation etc. 22 cases with hook worm infestation with history of abdominal pain, colic, intestinal cramps, nausea, fever, blood in your stool, appetite loss, itchy rash. 8 cases with jaundice, 7 cases with blood transfusions, 3 siblings with similar complaints, 2 cases with feeding difficulties is GERD. Most common significant history is fever.

HEPATOMEGALY	28
SPLEENOMEGALY	23
JAUNDICE	13
EDEMA	08
CLUBBING	01
LYMPHADENOPATHY	01
SIGNS OF TB	01
SIGNS OF RENAL FAILURE	01
Table 3: Positive Examination Findings in Patients with Severe Anemia	

Positive examination findings in patients with severe anemia, 28 patients with Hepatomegaly, 23 with Spleenomegaly, 13 with Jaundice, 8 with Edema, 1 with Clubbing, 1 with Lymphadenopathy, 1 with Signs of Tb, and 1 with Signs of Renal Failure like facial puffiness, decreased urine output, and hypertension.

IRON DEFICIENCY ANEMIA	40%
MALARIA	17%
SICKLE CELL ANEMIA	15%
BETA THALASEMIA	11%
SEPTICEMIA	4%
COLLAGEN VASCULAR DISEASE	4%
MALIGNANCIES	4%
DIMORPHIC ANEMIA	2%
BETA THALASEMIA TRAIT	2%
Table 4: Etiological Diagnosis in Children with Severe Anemia	

Etiological diagnosis in children with severe anaemia. Iron Deficiency Anaemia 40%, Malaria 17%, Sickle Cell Anaemia 15%, Beta Thalasemia 11%, Septicemia 4%, Collagen Vascular Disease 4%, Malignancies include ALL, AML 4%, Dimorphic Anaemia 2%, Beta Thalasemia Trait 2%.

DISCUSSION

This study shows that anaemia is major health problem in children. Incidence of anaemia in the present study is 84%. In 1month to 5yrs 78.05% are anaemic, in 6yrs to 14yrs 90% are anaemic. In the age group of 6yrs to 14yrs anaemia incidence is more than in 1month to 5yrs. In our study the incidence of severity of anaemia in 6years to 14years is mild 37.46%, moderate 58.49%, severe 4.44%. when compared to a study in tribal area of childhood anaemia in Mohana block in Orissa 5yrs to 14yrs by T sahu, N C Sahani, L Patnaik showed almost all children (99%) were found to be anaemic, more than 60% of them had moderate to severe anaemia.⁵ In their study they found mild, moderate, severe anaemia to be 42.1%, 49.1%, 8.8% respectively.

Verma M. et al in their study on urban school children of age group 5 -15years in Punjab found prevalence of anaemia was 51.5%.⁶ Verma A. et al in their study on adolescent girls found mild, moderate, severe anaemia to be 36.6%, 22.4%, 4.8% respectively.⁷ In our study Iron Deficiency anemia is the most common diagnosis, followed by malaria, Sickle Cell Anemia, Beta Thalasemia, Septicemia which is compared to a study by Gomber, Sunil et al found iron deficiency anaemia was the commonest type of anaemia noted in 68.42 per cent (65 of 95) children.⁸

CONCLUSIONS

Anemia is the most common comorbid condition in children aged 1month to 14 years, accounting for 84%. Incidence of severe anemia is 4.3%. Iron deficiency anemia is the most common etiological diagnosis of severe anemia. Incidence of anemia and severe anemia is more in 6years to 14years. Incidence of anemia is more in males than in females, but severe anemia is more common in females than in males. Most common physical findings in patients presented with severe anemia is hepatosplenomegaly. Most common etiological diagnosis in all age groups is iron deficiency anemia. But beta thalasemia, sickle cell anemia, malaria are not less important.

BIBLIOGRAPHY

1. National Family Health Survey 1992-99 [Analysis in brief on internet] [cited: 2016 Feb 22]. Available from <https://nfhsindia.org/data/india/indch7.pdf>.
2. UNICEF. State of the world's children report; 1997 [cited 2016 Feb 20]. Available from <http://www.unicef.org/sowc97/download/sow10f2.pdf>.
3. Parthasarathy A, Menon, Piyush Gupta, et al. IAP Textbook of paediatrics. 5th edition. New Delhi; Jaypee Brothers; c2013. p 638-42.
4. Kenneth R, Howard. Anaemias and other red cell diseases. 8th edition. New York; McGraw Hill; c2008.
5. Sahu T, Sahani NC, Patnaik L. Iron deficiency in India. Recent advances in paediatrics special volume in haematology. Eds. Gupte Suraj. Published By Jaypee 2000;7:1-21.
6. Verma M, Chhatwal J, Gurmeet Kaur. Prevalence of anaemia among urban school children of Punjab. Indian paediatrics 1998;35(12):1181-1188.
7. Verma A, Rawal VS, Kedia G, et al. Factors influencing anaemia among girls of school going age (6-18 yrs.) from the slums of Ahmedabad city. Indian Journal of Community Medicine Jan-Mar 2004;29(1):25-26.
8. Sunil Gomber, Bhawna, Nishi Madan, et al. Prevalence and etiology of nutritional anaemia among school children of urban slums. Indian Journal of Medical Research 118 (Oct 2003):167-171.